Speciation of arsenic by IC-ICP-MS: future standard method and its application on baby food samples

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Arsenic is known to most people as extremely poisonous and several criminal authors have used this fact to assassinate their characters in novels for decades. However, the authors seldom or never mention which of the species of arsenic they use, although that is elementary for the outcome of the intended murder. For example the organic compound arsenobetaine, the main arsenic species in marine organisms, is regarded as basically harmless to humans while the inorganic forms of arsenic, arsenite and arsenate found in rice, are toxic. To enable the evaluation of the true toxicity from arsenic in food, some kind of speciation analysis has to be performed. In this work, the concentration of inorganic arsenic in some baby food samples is evaluated. The applied methodology has recently been tested in a collaborative trial as a candidate standardized method for the determination of inorganic arsenic in foodstuffs by CEN (The European Committee for Standardization).